DIRECTORATE OF
GLOBAL ENGAGEMENT
INSTITUT TEKNOLOGI SEPULUH NOPEMBER

ITS Internship Programs

GUIDEBOOK

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INTERNSHIP PROGRAMS AT ITS

Institut Teknologi Sepuluh Nopember (ITS) welcomes international students to participate in its internship program, designed to provide hands-on experience and practical skill development. This program allows students to apply their knowledge, enhance their professional attitudes, and develop both general and specialized skills in laboratories, industries, or community settings.

Types of Internship Programs

ITS offers three internship options:

- Laboratory-Based Internship – Conduct research and gain practical experience in ITS laboratories.
- Industry-Based Internship – Work with industry partners to apply academic knowledge in real-world settings.
- Community-Based Internship – Engage with local communities to implement innovative solutions and gain social impact experience.

Duration

Internships typically last between 1 to 6 months, depending on the program and project requirements.

INTERNSHIP PROGRAMS AT ITS

Laboratory-Based Internship (1-6 months)

Institut Teknologi Sepuluh Nopember (ITS) offers approximately 100 engaging topics for its laboratory-based internship program. The program typically lasts between one to six months, allowing students to gain valuable hands-on experience while contributing to ongoing research or projects. In addition to academic activities, students also have the opportunity to participate in non-academic programs, such as the Cultural Camp.

Laboratory-Based Internship Topics

Faculty of Civil Planning and Geo Engineering

Architecture

Laboratory	Topics	Duration (months)
Architecture History, Theory and Critics	Documentation and Inventory of Nusantara Architecture	3-6
	BIM on Nusantara (Vernacular) Architecture Modelling	6
	Lifestyle Change Investigation during Pandemic and Post-Pandemic Design Theory	1-6
Housing and Human Settlement	Kampung Studies: Kampung Improvement Program	1-6
	Kampung Studies: Community-based kampung Development	1-6
	Kampung Studies: Spatial Dynamic in Kampung	1-6
	Housing for Aging Community	1-6
Urban Design	Infill Building	3-4
Architectural Sains and Environment	Field Measurement Method (Residents Behavior in Rusunawa)	1

Civil Engineering

Laboratory	Topics	Duration (months)
Transportation and Pavement Material	Optimizing Trunk and Feeder Transit Systems with Limited Budgets	1-6
	Evaluating Road Pavement Degradation in Tropical Regions with Overloaded Traffic Conditions	1-6
	Balancing Double Track Railway Development with Road Traffic Management at Level Crossing	1-6

Environmental Engineering

Laboratory	Topics	Duration (months)
Environmental Remediation	Remediation Technologies Screening Matrix to Remediate Contaminated Soil/Water	3-6
	Design of Remediation Technique for Toxic Site/Contaminated Site	3-6
	Bioremediation and Phytoremediation Laboratory/ Pilot Scale Experiment	3-6
Air Pollution Control and Climate Change	Soil Washing Technology Pilot Scale Experiment	3-6
Solid Waste Management and Hazardous and Toxic Waste	Climate Change	3-6
	Recycleable Waste Material Flow Analysis (Survey/Mapping)	3-6
	Microplastic Identification and Analysis	3-6
	Solid Waste Leachate Treatment	3-6
	Bioconversion of Organic Solid Waste Using BSF Larvae	3-6
Water Treatment Technology	Waste Collection and Reduction System	3-6
	Water and Wastewater Treatment Design and Technology	3-6
	Domestic Wastewater and Sanitation	3-6
	Water Supply and Water Loss	3-6

Geomatics Engineering

Laboratory	Topics	Duration (months)
Geodesy and Geodynamics	GNSS and Altimetry Data Processing/Analysis	4
Surveying and Cadastral	Low-cost GPS/GNSS for Cadastral Application	4
	Utilization of Participatory Mapping for Mapping Village Boundaries	4
Geomarine	Hydrography Survey	6
Geoinformatics	Integrated Geoinformation	3

Geomatics Engineering

Laboratory	Topics	Duration (months)
Geospatial	Remote Sensing for Precision Agriculture	6
	Development of Remote Sensing Algorithms for Sea and Inland Water Parameter Retrieval.	6
	Implementation of Geospatial Science and Technology	6
	Disaster Mitigation	6
	Applications of Remote Sensing	6

Geophysical Engineering

Laboratory	Topics	Duration (months)
Mineral and Underground Water Exploration	Geological Disaaster Mitigation	3-6
	Ring of Fire: Wonderful of Indonesia	3-6
Petrophysics	Geothermal Exploration and Monitoring	3-6

Urban and Regional Planning

Laboratory	Topics	Duration (months)
Urban Development and Design	Housing Policies Influencing Housing Provision	4

Laboratory-Based Internship Topics

Faculty of Industrial Technological and System Engineering

Chemical Engineering

Laboratory	Topics	Duration (months)
Industrial Waste and Biomass Convertion	Microbial Fuel Cell	1-3
	Environment	1-3
	Waste Water Treatment	1-3
	Biomass Utilization	1-3
	Fertilizer Manufacturing	3
Fluid Mechanics and Mixing	Computational FLuida Dynamics, Carbon Capture, Particle Synthesis	1-6
Process System Engineering	Process design, Process optimization, Process control, Proses safety, Carbon Capture Utilization Storage (CCUS)	4-6
Chemical Reaction Process and Biomass Convertion	Extraction of Atsiri Oil, Renewable Energy	3
	Biomass Processing & Biorefinery	3-6
Heat and Mass Transfer	Asbuton Processing	1-6
	Membrane Technology	1-6
	Reactive Absorption	1-6
	Distillation	1-6
Industrial Waste and Biomass Convertion	Bioenergy	1-6
	Platform Chemicals	1-6

Industrial and System Engineering

Laboratory	Topics	Duration (months)
Manufacturing Systems	Simulation Design of Smart Toyota Production System, Smart Manufacturing, Green Manufacturing, Lean 4.0	6
Industrial Management and System Design	Smart Product-Service System (PSS)	1-3
	Digital Servitization	1-3
	Green Business Process and Framework	1-3

Materials and Metallurgical Engineering

Laboratory	Topics	Duration (months)
Metallurgy and Manufacturing	Biomaterial for Orthopedic	5
	Bipolar Plate Development	5
	Surface Modification	5
	PEM Fuel Cell Manufacture	5
Material Physics	Material Characterization	5

Mechanical Engineering

Laboratory	Topics	Duration (months)
Thermal Engineering and Energy System	Numerical Simulation of Battery Cooling System	1-3
	Numerical Simulation of Combustion in Power Plant Boiler	1-4

Mechanical Engineering

Laboratory	Topics	Duration (months)
System Engineering and Control	Multibody Modeling and Control of Two Wheeled Vehicle	4
	Dynamic Simulation of bulk material Loading-Unloading by Vensim/Anylogic Software	4
	Monitoring and control Design of Mini Plant Pneumatic conveying System by National Instrument Card and Matlab Software	4
	Dynamic Simulation of Parallel Robots Using ADAMS	3
Vibration Engineering and Automotive Systems	Implementation of Machine Learning in Mechanical Engineering	5

Laboratory-Based Internship Topics

Faculty of Intelligent Electrical and Informatics Technology

Computer Engineering

Laboratory	Topics	Duration (months)
Telematics and Intelligent Multimedia	Human Interaction	4-6
	Machine Learning	4-6
	Biomedics	4-6
	Telemedicine	4-6
Multimedia Internet of Things	Deep learning for Assistive Technology	4-6

Electrical Engineering

Laboratory	Topics	Duration (months)
Instrumentation, Measurement, and Power System Identification	IOT System Hybrid Storage Power Management	4-6
	Characterization of Battery and/or Supercapacitor.	4-6
Power System Operation and Control	Application of Artificial Intelligence in Power Electricity and Energy Systems	4-6
Energy Conversion	Electric Machine and Drives	4-6
High Voltage	High Voltage Generation	4-6
Microelectronics and Embedded System	Design and implementation Analog & Digital Filter	4-6
Multimedia Communication	UAV-Assisted IoT Network	4-6

Information Technology

Laboratory	Topics	Duration (months)
Smart City and Cybersecurity	IoT for Smart Agriculture	1-6

Information Systems

Laboratory	Topics	Duration (months)
Enterprise System	Enterprise System	6
Data Acquisition and Information Dissemination	Leveraging IT for Halal Compliance Systems	3-6
Data Acquisition and Information Dissemination	Knowledge Graphs	3-6

Laboratory-Based Internship Topics

Faculty of Science and Data Analytics

Actuarial Science

Laboratory	Topics	Duration (months)
Risk Management and Actuarial Data Analytics	Disaster Risk Reduction and Management	1-4

Biology

Laboratory	Topics	Duration (months)
Ekologi	Biodiversity of Highland Lakes at Ranupani Area	4-6
Ekologi	Invasive Species of Highland Lakes at Ranupani Area	4-6

Chemistry

Laboratory	Topics	Duration (months)
Material Chemistry and Energy	Photocatalysis for Energy and Environment Application	3-6
Fuel Cell Chemistry	Membrane Teaching Factory	3-6

Physics

Laboratory	Topics	Duration (months)
Theoretical Physics	Quantum Teleportation and Its Implementation on Qiskit and IBM Quantum Computers	1-3

Statistics

Laboratory	Topics	Duration (months)
Computational Statistics and Data Science	Bayesian Data Driven Modeling	1-4

Mathematics

Laboratory	Topics	Duration (months)
Machine Learning and Big Data	Data Science and Artificial Intelligence	3-6
	Bioinformatics/ Computational Biology	3-6
	Data Mining	3-6
	Application of Machine Learning (Predictive Maintenance, Health, Finance, Image)	3-6
Modeling and Simulation	Computational Fluid Dynamics, Quad Computer, UAV (Unmanned Aerial Vehicle), UABoat (Unmanned Aerial Boat)	3-6

Laboratory-Based Internship Topics

Faculty of Marine Technology

Naval Architecture

Laboratory	Topics	Duration (months)
Ship Structure	Creating a Graphical User Interface based on Finite Element Method for Strength Assessment of Ship Structures	1-6
	Evaluation of Buckling Collapse and Ultimate Strength on the Cracked-Curved Panel Employing Shell-Solid Element	1-6
	Structural Investigation on the Barge Modification Considering Large Bending Moment	1-6
	Ship Material Evaluation Using Destructive and Non-Destructive Methods	1-6
	Developing An Interface a Real-Time Stress and Strain Monitoring System in Thin Plate Structure	1-6
Ship Production Technology & Management	Development of Shipyard Performance Measurement Framework	1-6
	Digital And IOT In Ship Repair, Survey and Inspection	1-6
	Small Boat Production Technology with Alternative, Sustainable and Renewable Material	1-6
	Shipbuilding Strategy and Management	1-6
	Welding Technology in Shipbuilding Considering Techno-Eco-Enviro	1-6

Marine Transportation Engineering

Laboratory	Topics	Duration (months)
Marine Transportation and Logistics	The Role of Hub-and-Spoke Ports in Logistics Networks.	1-4

Ocean Engineering

Laboratory	Topics	Duration (months)
Ocean Structure Hidrodynamics	Numerical Model of Floating Breakwater	3-6
	Design and numerical analysis of Floating Offshore Structure	3-6
Ocean Structure, Material and Production	Steel Corrosion Study Case in Ocean Structure	3-6
	Fatigue Analysis in Ocean Structure	3-6
Ocean Engineering Construction	Design and numerical analysis of an Offshore Aquaculture	3-6
	Reliability-based Design Optimisastion (RBDO) of Offshore Structure	3-6
	Structure-Local Analysis of Offshore Structure	3-6
Ocean Engineering Hydro-Information	Numerical Modelling of Ocean Renewable Energy (tidal, current, wave, OTEC, salinity gradient)	3-6
	Risk Analysis for Ocean Engineering Study Case	3-6
Environment and Ocean Energy	Ocean Model For Tidal Current Estimation in Archipelago Area	3-6
	Potential Reuse Oil and Gas Offshore Pipeline for OTEC Cold Water Pipe	3-6
Coastal and Port Infrastructure	Artificial Reef Design Study	3-6

Laboratory-Based Internship Topics

Faculty of Vocational Studies

Chemical Industrial Engineering

Laboratory	Topics	Duration (months)
Process Operating System	Material Synthesis for Industrial Waste Treatment, Extraction of Multicomponent System Containing Bio-Based Chemicals	3
Industrial Biotechnology	Biogas/Bioethanol Production from Biomass, Waste Water Treatment	3
Applied Chemistry	3D Printing of Synthetic Bone from Bio-Renewable Resources	3
Industrial Chemical Process	HAp Synthesis from Bio-Renewable Resources	3

Civil Infrastructure Engineering

Laboratory	Topics	Duration (months)
Material and Building Structure	Evaluation and rehabilitation of Civil Structures	4-6
Construction Implementation Management	BIM Implementation on Infrastructure	4
Hydrotechnic and Surveying	Water Resources development engineering	4

Instrumentation Engineering

Laboratory	Topics	Duration (months)
Instrumentation Safety System	IoT Technology, Automation Technology, Atmospheric Monitoring, Semiconductor Digital IC Design	1-4
Measurement Instrumentation	Sensor and Transmitter Technology, Calibration System	1-4

Instrumentation Engineering

Laboratory	Topics	Duration (months)
Design and System Engineering	Smart Active Air Suspension	4
Metallurgy and Material Engineering	Multi-Physics Analysis (Structure, Material, and Fluid) for Computational Design of Wind Turbine Blades	4
Metallurgy and Material Engneering	Experimental Analysis of Organic Inhibitors at the Nanoscale	4-6
Industrial Manufacturing	Prediction of Surface Roughness and Hardness on Fabricated FDM Additive Manufacturing Using Machine Learning	2
Industrial Manufacturing	Additive Manufacturing (Concrete Material, Wire Arc Additive Manufacturing)	4
Applied Fluids and Thermal Engineering	CFD Application on Industrial Project	4-6

INTERNSHIP PROGRAMS AT ITS

Industrial-Based Internship (3-6 months)

Institut Teknologi Sepuluh Nopember (ITS) collaborates with companies in Indonesia to provide international students with valuable opportunities to participate in industrial internships. Interested students may propose a topic and specify their preferred industries to ITS.

Accepted international students will be paired with ITS students to work on industry-related assignments. Please note that, in accordance with Indonesian immigration regulations, international students are not permitted to receive a salary during the internship. The duration of the industrial internship typically ranges from three (3) to six (6) months.

The host companies for the industrial-based internship program include:

- PT. Etex Building Performance Indonesia
- PT. Garuda Maintenance Facility Aero Asia Tbk
- PT. Dok dan Perkapalan Surabaya (Persero)
- PT. Dok Bahari Nusantara
- PT. Philips Ralin Electronics

INTERNSHIP PROGRAMS AT ITS

Community-Based Internship (3-6 months)

Institut Teknologi Sepuluh Nopember (ITS) collaborates with government institutions, non-governmental organizations (NGOs), and various community groups in Indonesia to offer international students the opportunity to engage in meaningful projects. These internships focus on working with government bodies, NGOs, and local communities, particularly in Surabaya, on specific topics and initiatives.

International students can choose from a range of topics for the community-based internship program at ITS, including:

- Development of Small and Medium Enterprises (SMEs) in Surabaya
- Enhancing the utilization of Broadband Learning Centers (BLCs) – IT centers for the community in Surabaya
- Technical, economic, and social study of aquaculture projects in Indonesia's coastal areas
- Development of seaweed plantations
- Promoting a green lifestyle in Indonesia
- Advancing blue energy for a sustainable blue economy
- Teaching in elementary and secondary schools

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Thank You

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